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10/006,067	12/06/2001	Davide Mandato	282665US8X	9049
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OBLON, SPIVAK, MCCLELLAND, MAIER & NEUSTADT, P.C. 1940 DUKE STREET ALEXANDRIA, VA 22314			EXAMINER BATURAY, ALICIA	
			ART UNIT	PAPER NUMBER
			2155	

SHORTENED STATUTORY PERIOD OF RESPONSE	NOTIFICATION DATE	DELIVERY MODE
3 MONTHS	03/02/2007	ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

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# Office Action Summary

Application No.

10/006,067

Applicant(s)

MANDATO ET AL.

Examiner

Alicia Baturay

Art Unit

2155

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 05 December 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 24-47 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 24-47 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 06 December 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
- 1) ☒ Certified copies of the priority documents have been received.
  - 2) ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

### **DETAILED ACTION**

1. This Office Action is in response to a request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), which was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 6 November 2006 has been entered.
2. Claims 24 and 47 were amended.
3. Claims 1-23 were cancelled.
4. Claims 24-47 are pending in this Office Action.

### ***Response to Amendment***

5. Applicant's amendments and arguments with respect to claims 24-47 filed on 6 November 2006 have been fully considered but they are deemed to be moot in view of the new grounds of rejection.

### ***Claim Rejections - 35 USC § 112***

6. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.
7. Claims 24 and 47 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claims 24 and 47 state "...wherein said middleware is adapted to

negotiate with communication peers to generate adaptation paths by having a specific adaptation path proposed by an initiator of communication peers being validated by each of the other communication peers against its own adaptation policies, and having each of the other communication peers respond with a counter offer that is limited to a definition of a subset of the specific adaptation path proposed by the initiator..." which raise new issues of clarity, possibly resulting in claims that are broader than those previously presented. The amendment to claims 24 and 47 states "...being validated by each of the other communication peers against its own adaptation policies." It is believed that "its own" is modifying "each of the communications peers," which suggests each peer validates using its own policy. Clarification and correction of this amended statement is requested.

***Claim Rejections - 35 USC § 103***

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claims 24-47 are rejected under 35 U.S.C. 103(a) as being unpatentable over Zinky et al. (U.S. 6,480,879) and further in view of Neureiter et al. ("The BRAIN Quality of Service Architecture for Adaptable Services with Mobility Support").

Zinky teaches the invention substantially as claimed including a system that determines the quality of service and regulates activity within the distributed system based on the determined quality of service (see Abstract).

10. With respect to claim 24, Zinky teaches a computer program, stored in a tangible storage medium, for managing quality of service, the program representing middleware and comprising executable instructions that cause a computer to:

Configure an application programming interface (Zinky, col. 9, lines 47-50) as a data model describing quality-of-service contracts (Zinky, col. 5, line 66 – col. 6, line 4) and quality-of-service adaptation paths (Zinky, col. 8, lines 48-56) as specified by quality-of-service aware mobile multimedia applications (Zinky, col. 2, lines 61-63) using the application programming interface, in order to manage quality-of-service and mobility-aware for managing network connections with other applications (Zinky, col. 6, lines 22-30).

Zinky does not explicitly teach where the middleware is adapted to negotiate with communication peers.

However, Neureiter teaches where a quality-of-service adaptation path defines an adaptation policy identifying quality-of-service specifications (Neureiter, page 445, "Introduction," paragraphs 1 and 2) and allows quality-of-service changes (Neureiter, page 449, "QoS Broker"), and where the middleware is adapted (Neureiter, page 447, paragraphs 1 and 2) to negotiate with communication peers to generate adaptation paths by having a specific adaptation path proposed by an initiator of communication peers being validated by each of the other communication peers against its own adaptation policies, and having each

of the other communication peers respond with a counter offer that is limited to a definition of a subset of the specific adaptation path proposed by the initiator, to measure the actual quality-of-service, and to solve any quality-of-service problem by deciding which of the possible adaptations to perform (Neureiter, page 449, "QoS Broker").

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Zinky in view of Neureiter in order to enable the middleware to be adapted to negotiate with communication peers. One would be motivated to do so in order to support middleware functionality, which provides quality of service support for applications.

11. With respect to claim 25, Zinky teaches the invention described in claim 24, including the computer program where the adaptation paths are expressed as hierarchical finite state machines based on quality-of-service contexts (Zinky, col. 6, lines 22-36). The Authoritative Dictionary of IEEE Standards Terms defines a finite state machine as "a computational model consisting of a finite number of states and transitions between those states, possibly with accompanying actions." Zinky teaches a contract that detects a transition condition that results in one of three regions of QoS.
12. With respect to claim 26, Zinky teaches the invention described in claim 25, including the computer program where a quality-of-service context identifies an arrangement of quality-of-service specifications to be enforced throughout a given set of streams (Zinky, col. 6, lines 7-11).

13. With respect to claim 27, Zinky teaches the invention described in claim 25, including the computer program where the hierarchical finite state machines comprise controllable states in the context of streams at the lowermost level (Zinky, col. 7, lines 26-36).
14. With respect to claim 28, Zinky teaches the invention described in claim 25, including the computer program where quality-of-service synchronization is provided so as to ensure that some user's given constraints on quality-of-service are globally enforced throughout a given set of streams (Zinky, col. 3, lines 60-67) by applying a defined set of quality-of-service constraints to each stream of a set of streams (Zinky, col. 1, lines 40-54).
15. With respect to claim 29, Zinky teaches the invention described in claim 24, including the computer program where the specification of the quality-of-service contracts comprises hysteresis parameters for the transition between quality-of-service states (Zinky, col. 9, lines 51-56) time synchronization is provided for a multiplicity of related streams by a definition of time-synchronization constraints for related streams having the same destination (Zinky, col. 1, lines 40-54).
16. With respect to claim 30, Zinky teaches the invention described in claim 24, including the computer program where the specification of the quality-of-service contracts comprises utility parameters defining user's perceived utility factors associated with the respective quality-of-service contract (Zinky, col. 6, lines 12-21).

17. With respect to claim 31, Zinky teaches the invention described in claim 24, including the computer program further characterizing executable instructions that cause a computer to provide an application handler unit to offer the application programming interface for providing quality-of-service aware mobile multimedia applications with the possibility of managing network connections with other applications (Zinky, col. 5, line 66 – col. 6, line 4).
18. With respect to claim 32, Zinky teaches the invention described in claim 31, including the computer program where the application handler unit registers requests for notification events from applications and generates such events whenever the corresponding triggering conditions occur (Zinky, col. 7, lines 52-57).
19. With respect to claim 33, Zinky teaches the invention described in claim 31, including the computer program where the application handler unit operates on the basis of a data model comprising streams, quality-of-service context (Zinky, col. 6, lines 7-11), quality-of-service associations and adaptation paths (Zinky, col. 8, lines 48-56) modeled as hierarchical finite state machines (Zinky, col. 6, lines 22-36).
20. With respect to claim 34, Zinky teaches the invention described in claim 33, including the computer program where the application handler unit creates for each unidirectional stream an instance of a chain controller for handling data plane and quality-of-service control plane related issues (Zinky, col. 7, lines 6-18).



21. With respect to claim 35, Zinky teaches the invention described in claim 34, including the computer program where the chain controller compares the quality-of-service requirements of a user with actual values of monitored parameters and configures a chain of multimedia components accordingly (Zinky, col. 7, lines 38-57).
22. With respect to claim 36, Zinky teaches the invention described in claim 35, including the computer program where the chain controller creates and manages a transport service interface socket, whereby the multimedia components directly exchange data through the transport service interface socket (Zinky, col. 5, lines 52-65).
23. With respect to claim 37, Zinky teaches the invention described in claim 34, including the computer program where the chain controller monitors and controls the local resources required to process the given stream by using resource managers (Zinky, col. 9, lines 30-38).
24. With respect to claim 38, Zinky teaches the invention described in claim 34, including the computer program further comprising executable instructions that cause a computer to configure a quality-of-service broker for managing overall local resources by managing the whole set of streams via the chain controllers (Zinky, col. 5, lines 23-30).
25. With respect to claim 39, Zinky teaches the invention described in claim 38, including the computer program where the quality-of-service broker manages system-wide resources via resource controllers (Zinky, col. 9, lines 30-38).

26. With respect to claim 40, Zinky teaches the invention described in claim 38, including the computer program where the quality-of-service broker controls end-to-end quality-of-service negotiation by using a session manager (Zinky, col. 3, lines 60-67).

27. With respect to claim 41, Zinky teaches the invention described in claim 38, including a computer program, stored in a tangible storage medium, for managing quality of service, the program representing middleware and comprising executable instructions that cause a computer to:

Configure an application programming interface (Zinky, col. 9, lines 47-50) as a data model describing quality-of-service contracts (Zinky, col. 5, line 66 – col. 6, line 4) and quality-of-service adaptation paths (Zinky, col. 8, lines 48-56) as specified by quality-of-service aware mobile multimedia applications (Zinky, col. 2, lines 61-63) using the application programming interface, in order to manage quality-of-service and mobility-aware for managing network connections with other applications (Zinky, col. 6, lines 22-30).

Zinky does not explicitly teach where the middleware is adapted to negotiate with communication peers.

However, Neureiter teaches where a quality-of-service adaptation path defines an adaptation policy identifying quality-of-service specifications (Neureiter, page 445, "Introduction," paragraphs 1 and 2) and allows quality-of-service changes (Neureiter, page 449, "QoS Broker"), and where the middleware is adapted (Neureiter, page 447, paragraphs 1 and 2) to negotiate with communication peers to generate adaptation paths by having a specific adaptation path proposed by an initiator of communication peers being validated by

each of the other communication peers against its own adaptation policies, and having each of the other communication peers respond with a counter offer that is limited to a definition of a subset of the specific adaptation path proposed by the initiator, to measure the actual quality-of-service, and to solve any quality-of-service problem by deciding which of the possible adaptations to perform (Neureiter, page 449, "QoS Broker") and the computer program where the quality-of-service broker includes further functionality for downloading plug-ins corresponding to a given version of a data model which can not be handled by the application handler unit (Neureiter, page 447, "The Proposed BRAIN End Terminal Architecture (BRENTA)," paragraph 1).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Zinky in view of Neureiter in order to enable the middleware to be adapted to negotiate with communication peers. One would be motivated to do so in order to support middleware functionality, which provides quality of service support for applications.

28. With respect to claim 42, Zinky teaches the invention described in claim 41, including a computer program, stored in a tangible storage medium, for managing quality of service, the program representing middleware and comprising executable instructions that cause a computer to:

Configure an application programming interface (Zinky, col. 9, lines 47-50) as a data model describing quality-of-service contracts (Zinky, col. 5, line 66 – col. 6, line 4) and quality-of-service adaptation paths (Zinky, col. 8, lines 48-56) as specified by quality-of-service aware mobile multimedia applications (Zinky, col. 2, lines 61-63) using the

application programming interface, in order to manage quality-of-service and mobility-aware for managing network connections with other applications (Zinky, col. 6, lines 22-30).

Zinky does not explicitly teach where the middleware is adapted to negotiate with communication peers.

However, Neureiter teaches where a quality-of-service adaptation path defines an adaptation policy identifying quality-of-service specifications (Neureiter, page 445, "Introduction," paragraphs 1 and 2) and allows quality-of-service changes (Neureiter, page 449, "QoS Broker"), and where the middleware is adapted (Neureiter, page 447, paragraphs 1 and 2) to negotiate with communication peers to generate adaptation paths by having a specific adaptation path proposed by an initiator of communication peers being validated by each of the other communication peers against its own adaptation policies, and having each of the other communication peers respond with a counter offer that is limited to a definition of a subset of the specific adaptation path proposed by the initiator, to measure the actual quality-of-service, and to solve any quality-of-service problem by deciding which of the possible adaptations to perform (Neureiter, page 449, "QoS Broker") and the computer program where the quality-of-service broker and the plug-ins are forming a quality-of-service broker cluster (Neureiter, page 449, "Component," "Chain Coordinator (ChC)" and "QoS Broker").

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Zinky in view of Neureiter in order to enable the middleware to be adapted to negotiate with communication peers. One would be motivated to do so in order to support middleware functionality, which provides quality of service support for applications.

29. With respect to claim 43, Zinky teaches the invention described in claim 34, including the computer program where the application handler unit and the various instances of the chain controller are forming an application handler cluster (Zinky, col. 4, lines 20-31).
30. With respect to claim 44, Zinky teaches the invention described in claim 42, including the computer program where the application handler cluster and the quality-of-service broker cluster are included in one open distributed processing capsule (Zinky, col. 5, lines 10-18).
31. With respect to claim 45, Zinky teaches the invention described in claim 42, including the computer program where the application handler cluster and the quality-of-service broker cluster are included in separate open distributed processing capsules (Zinky, col. 5, lines 10-18).
32. With respect to claim 46, Zinky teaches the invention described in claim 45, including the computer program where the application handler cluster being included in one open distributed processing capsule is installed on a given local node and the quality-of-service broker cluster being included in separate open distributed processing capsule is installed on a separate open distributed processing node, whereby a proxy quality-of-service broker is installed on the given local node (Zinky, col. 5, lines 11-16).
33. Claim 47 does not teach or define any new limitations above claim 24 and therefore is rejected for similar reasons.

***Response to Arguments***

34. Applicant's arguments filed 6 November 2006 have been fully considered, but they are not persuasive for the reasons set forth below.

Applicant's arguments have been considered but are moot in view of the new ground(s) of rejection.


*Conclusion*

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Alicia Baturay whose telephone number is (571) 272-3981. The examiner can normally be reached at M-Th 7:15 - 5pm, 2nd Fridays 7:15-3:45, and every other Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Saleh Najjar can be reached on (571) 272-4006. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Alicia Baturay  
February 20, 2007

  
SALEH NAJJAR  
SUPERVISORY PATENT EXAMINER